With the authors' compts

REMARKS

ON THE

CHANGES WHICH ARE SUPPOSED TO HAVE TAKEN PLACE

IN THE

TYPE OF CONTINUED FEVER.

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It is not my object, in this paper, to enter into any discussion concerning the general question of changes of type in disease. I merely wish to call attention to one or two circumstances, which, in my opinion, must modify in a very great degree the conclusions which have been drawn by Dr Christison, in a very valuable paper read by him before the Medico-Chirurgical Society of Edinburgh, and published in the *Edinburgh Medical Journal* for January of the present year.

One of the main arguments, if not the principal one, urged by Dr Christison in favour of a change in the type of fever is, that in the epidemic of 1817–19, the practice of bleeding largely, so far from being injurious, as it would undoubtedly be in the fever which of late years has been most prevalent, was followed by the most favourable results. Thus he remarks, after speaking of drawing "a legitimate allowance of thirty ounces (of blood) in all:" "And let it be remembered that we did by no means slay our patients by such blood-thirstiness. On the contrary, the mortality from the whole forms of fever collectively in that epidemic, did not exceed 1 in 22 at any period, and was reduced to 1 in 30 as the epidemic spread, and the remedy became more and more familiar."[1] It is well known, however, and acknowledged by Dr Christison himself, that the fever which characterised this epidemic was that which is now familiar to many members of the profession under the designation of Relapsing Fever, and which was probably included in the *synocha*

[1] *Edinburgh Medical Journal*, January 1858, p. 587.

of Cullen.[1] I am aware that Dr Christison, and many other distinguished authorities, still regard this fever as a mere variety of typhus; but whether this be the case or not, whether the poisons of the two diseases be identical or different, whether, in short, the diseases themselves be different species or different varieties of the same affection, are questions quite unnecessary to the present inquiry. What I maintain is, that this relapsing fever, which seems only to occur in the epidemic form at lengthened intervals, has been at all times remarkable for its small mortality, as compared with that of the ordinary typhus, and that when no bleeding has been resorted to, the mortality has been even smaller than under the heroic practice, which was resorted to in Edinburgh during the epidemic of 1817–20.

Dr Christison tells us that the mortality from this epidemic, under the bleeding system, was from 1 in 22 to 1 in 30, or, in other words, from $4\frac{1}{2}$ to $3\frac{1}{3}$ per cent.; and out of 743 cases which came under the notice of Dr Welsh, who wrote a history of the epidemic, and who was the great advocate for copious bleeding, 34, or $4\frac{1}{2}$ per cent., died. Now, this relapsing fever was no new disease in 1817. Frequent mention is made of it by that accurate observer Rutty, in his *History of the Weather and Seasons, and of the Prevailing Diseases in Dublin*, as having occurred in Ireland during the last century. The following extract from Rutty's work shows that an epidemic of relapsing fever occurred in Ireland in the autumn of 1739, while it also indicates that, even at that remote period, particular attention was attracted by the small mortality which it occasioned, this small mortality, moreover, being a concomitant, if not the consequence of a non-recourse to medical interference of any sort. "The latter part of July, and the months of August, September, and October (1739) were infested with a fever, which was very frequent during this period, not unlike that of the autumn of the preceding year, with which compare also the years 1741, 1745, and 1748. It was attended with an intense pain in the head. It terminated sometimes in four, for the most part in five or six days, sometimes in nine, and commonly in a critical sweat. It was far from being mortal. I was assured of seventy of the poorer sort at the same

[1] Relapsing Fever may be defined as follows:—A disease commencing very abruptly with a sensation of coldness and rigors, and attended by quick and often incompressible pulse, white tongue, tenderness at the epigastrium, vomiting, enlarged liver and spleen; occasionally jaundice; constipation; high coloured urine; great heat of skin, but no eruption; severe headache, and pains in the back and limbs; restlessness; and rarely slight delirium;—an abrupt cessation of all these symptoms, with free sweating between the fourth and seventh days, usually on the fifth;—after a complete apyretic interval (during which the patient may get up and walk about), an abrupt relapse on the fourteenth day from the first commencement, running a similar course to the first attack, and terminating on or about the third day of the relapse;—rarely sudden syncope and death;—after death, no specific lesion, but in most cases enlargement of liver and spleen.

time in this fever, abandoned to the use of whey and God's good providence, who all recovered. The crisis, however, was very imperfect, for they were subject to relapses, even sometimes to the third time; nor did their urine come to a complete separation. Divers of them, as their fever declined, had a paroxysm in the evening, and in some there succeeded pains in the limbs."[1] Several epidemics of relapsing fever have occurred subsequently to that of 1817–20; and although venesection has constituted little or no part of the treatment, the mortality has not exceeded, or has been considerably less, than that observed during the period just alluded to. Thus, in 1843, relapsing fever was again epidemic in Edinburgh, and was made the subject of a monograph by Dr Rose Cormack,[2] and of a lengthened series of papers in the *Medical Gazette* by Dr Wardell.[3] Among the cases observed by Dr Wardell, the mortality was only 1 in 20; and among Dr Cormack's cases it was 1 in $16\frac{1}{2}$. Again, out of 7804 cases of relapsing fever (classified as distinct from typhus), which were admitted into the Glasgow Royal Infirmary between the years 1843 and 1853 inclusive, only 405 or 5·2 per cent. died;[4] and of 203 cases admitted into the Edinburgh Infirmary in the year 1848–49, only 8 cases, or 3·94 per cent. died.[5] The following table gives the mortality from all the cases of relapsing fever admitted into the London Fever Hospital, during the last ten years :—

TABLE I.

Cases of Relapsing Fever admitted into the London Fever Hospital.

Years.	No. of Cases.	Deaths.
1848	13	1
1849	29	0
1850	32	2
1851	256	7
1852	88	1
1853	16	0
1854	5	0
1855	1	0
1856	0	0
1857	1?	0
Total,	441	11

[1] *A Chronological History of the Weather and Seasons, and of the Prevailing Diseases in Dublin.* By John Rutty, M.D. Lond. 1770. Pp. 75 and 76.

[2] *Natural History, Pathology, and Treatment of the Epidemic Fever at present Prevailing in Edinburgh and other Towns.* By John Rose Cormack, M.D. Edinburgh, 1843.

[3] *London Medical Gazette.* Vols. xxxvii. to xl.

[4] *Glasgow Medical Journal.* Vol. ii., p. 161.

[5] *Statistical Tables, Royal Infirmary.* Ninth Series, p. 15.

From this table it would appear, that out of 441 cases of relapsing fever treated in the London Fever Hospital, during the last ten years, only 2½ per cent. have died, or about 1 in 40.

Typhus and enteric fever (typhoid fever or dothinenteritis) present a striking contrast in this respect to the relapsing fever, as will be apparent from Table II., which shows the rate of mortality from each of these fevers in the London Fever Hospital, during the last ten years.

TABLE II.

Mortality from Typhus and Enteric Fever in the London Fever Hospital in Ten Years.

Years.	Typhus.			Enteric Fever.		
	No. of Cases.	Deaths.	Mortality Per Cent.	No. of Cases.	Deaths.	Mortality Per Cent.
1848	526	106	20·15	152	41	26·97
1849	155	39	25·16	138	26	18·84
1850	130	24	18·46	137	24	17·51
1851	68	6	8·82	234	30	12·82
1852	204	24	11·76	140	25	17·85
1853	408	90	22·06	211	59	27·96
1854	337	68	20·18	228	44	19·3
1855	342	82	24·	217	31	14·28
1856	1062	207	19·49	149	23	15·43
1857	274	69	25·18	214	30	14·02
Total, .	3506	715	20·39	1820	333	18·29
Deducting cases fatal within 24 hours after admission,	3457	668	19·32	1806	319	17·66
Deducting cases fatal within 48 hours,	391	600	17·69	1791	304	16·97

Moreover, any one who will take the trouble of studying the historical records of fever, will find that the true typhus, with a measly eruption, has invariably been productive of a far greater mortality than relapsing fever, and that at no period has it derived benefit from copious depletion.

Among other arguments in favour of blood-letting in the epidemic of 1817–20, it was urged that, in many cases, its practice was followed by the most sudden and marked improvement in the general symptoms. Dr Welsh speaks of it as having "cut short" the disease

in many cases. Against this, however, it must be borne in mind that a very sudden improvement in the symptoms constitutes a peculiarity of relapsing fever, totally independent of venesection. Dr Cormack, speaking of the effects of bleeding in the relapsing fever of 1843, remarks, "These beneficial changes were often not effects, though sequences of the bleeding, as was satisfactorily proved by the very same changes frequently occurring as suddenly and unequivocally in patients in the same wards, and affected in the same way, who were subjected to no treatment whatever."[1] This observation has frequently been confirmed in the London Fever Hospital. Dr Jenner, after mentioning a case of relapsing fever, which had been bled in this institution with no marked benefit, observes:— "Nature, unaided by the loss of blood, in many cases effected a much larger improvement in a much shorter space of time."[2]

When we recollect the small mortality from relapsing fever, as compared with that of the more ordinary forms, typhus and enteric fever, it is obvious that the greater the ratio which the relapsing cases bears to that of the other forms, the less will be the aggregate rate of mortality from all the cases of continued fever taken together; or, in other words, the rate of mortality will be smallest at those places, and in those years, in which there has been the largest number of relapsing cases. This is well shown in Table III., which gives the number of deaths and the rate of mortality from all the cases of continued fever (including those entered as "febricula") which have been admitted into the London Fever Hospital during ten years. When this Table is compared with Table I., it will be seen that the mortality was very much smaller in the two years, in which there was the greatest number of relapsing cases; although it is also to be observed, that the mortality from typhus only, in the same two years, was much below the average.

I would only add three remarks in conclusion, which I think may be regarded as legitimate inferences from the foregoing statement of facts:—

1. In comparing the mortality from continued fever at different times and places, or for the purpose of judging of the merits of different plans of treatment, it is essential to take into account the form of fever which has prevailed.

2. The small mortality, and the frequency of sudden improvement in the symptoms, which were observed to follow venesection in the epidemic of 1817–20, and which have been attributed to that practice, were characteristics of the relapsing form of fever which then prevailed, and have been equally characteristics of it at all times, even when blood-letting has never been resorted to.

3. Consequently, it is not a legitimate argument in favour of a change in the constitutional type of fever, to contrast the mortality

[1] *Op. cit.*, p. 151.
[2] *Medical Times and Gazette.* New Series. Vol. ii., p. 31.

after blood-letting in the *relapsing* epidemic of 1817–20, with what would be the effects of bleeding in the *typhus* of the present day.

TABLE III.

Mortality from the Cases of Continued Fever, taken collectively, admitted into the London Fever Hospital in Ten Years.[1]

Years.	No. of Cases.	Deaths.	Mortality Per Cent.
1848	707	148	20·93
1849	401	65	16·21
1850	361	50	13·85
1851	614	43	7·00
1852	561	50	8·91
1853	787	149	18·93
1854	714	112	15·68
1855	622	113	18·16
1856	1300	230	17·69
1857	561	99	17·64
Total,	6628	1059	15·98
Deducting cases fatal within 24 hours after admission,	6567	998	15·19
Deducting cases fatal within 48 hours,	6482	913	14·07

[1] During ten years the different forms of Continued Fever, admitted into the London Fever Hospital, have been carefully distinguished, and records have been preserved of every case. From these records I have prepared the tables contained in this paper.

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